

FIG. 1A
(PRIOR ART)

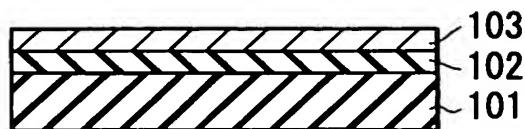


FIG. 1B
(PRIOR ART)

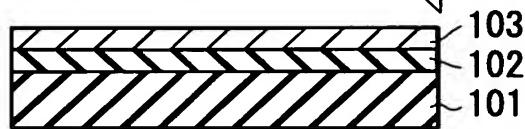


FIG. 1C
(PRIOR ART)

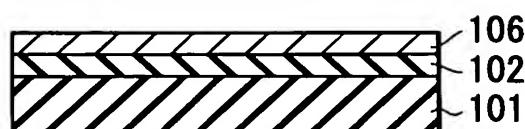


FIG. 1D
(PRIOR ART)

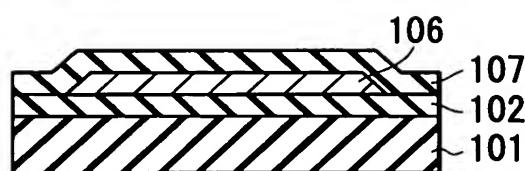


FIG. 1E
(PRIOR ART)

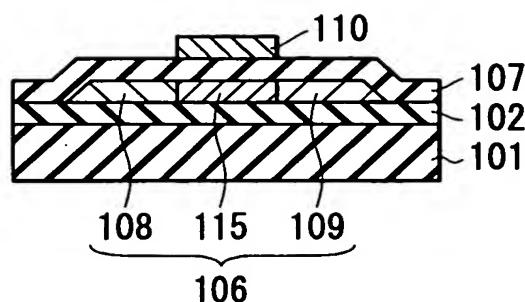


FIG. 1F
(PRIOR ART)

FIG. 2

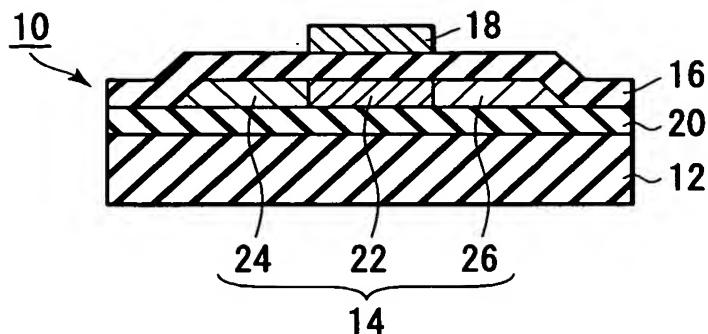


FIG. 3

Dopant	Carbon	Oxygen
Acceleration energy	100 KeV	130 KeV
Sample number	Dose (atoms/cm ²)	Dose (atoms/cm ²)
001	1.5×10^{13}	3×10^{12}
002	1.5×10^{13}	6×10^{12}
003	1.5×10^{13}	1.5×10^{13}
004	1.5×10^{13}	3×10^{13}
005	1.5×10^{13}	6×10^{13}
006	3×10^{13}	3×10^{12}
007	3×10^{13}	6×10^{12}
008	3×10^{13}	1.5×10^{13}
009	3×10^{13}	3×10^{13}
010	3×10^{13}	6×10^{12}
011	6×10^{13}	3×10^{12}
012	6×10^{13}	6×10^{13}
013	6×10^{13}	1.5×10^{13}
014	6×10^{13}	3×10^{13}
015	6×10^{13}	6×10^{13}

Dose (atoms/cm ²)	Concentration (atoms/cm ³)	
	Carbon	Oxygen
3×10^{12}		1×10^{17}
6×10^{12}		2×10^{17}
1.5×10^{13}	5×10^{17}	5×10^{17}
3×10^{13}	1×10^{18}	1×10^{18}
6×10^{13}	2×10^{18}	2×10^{18}

FIG. 4

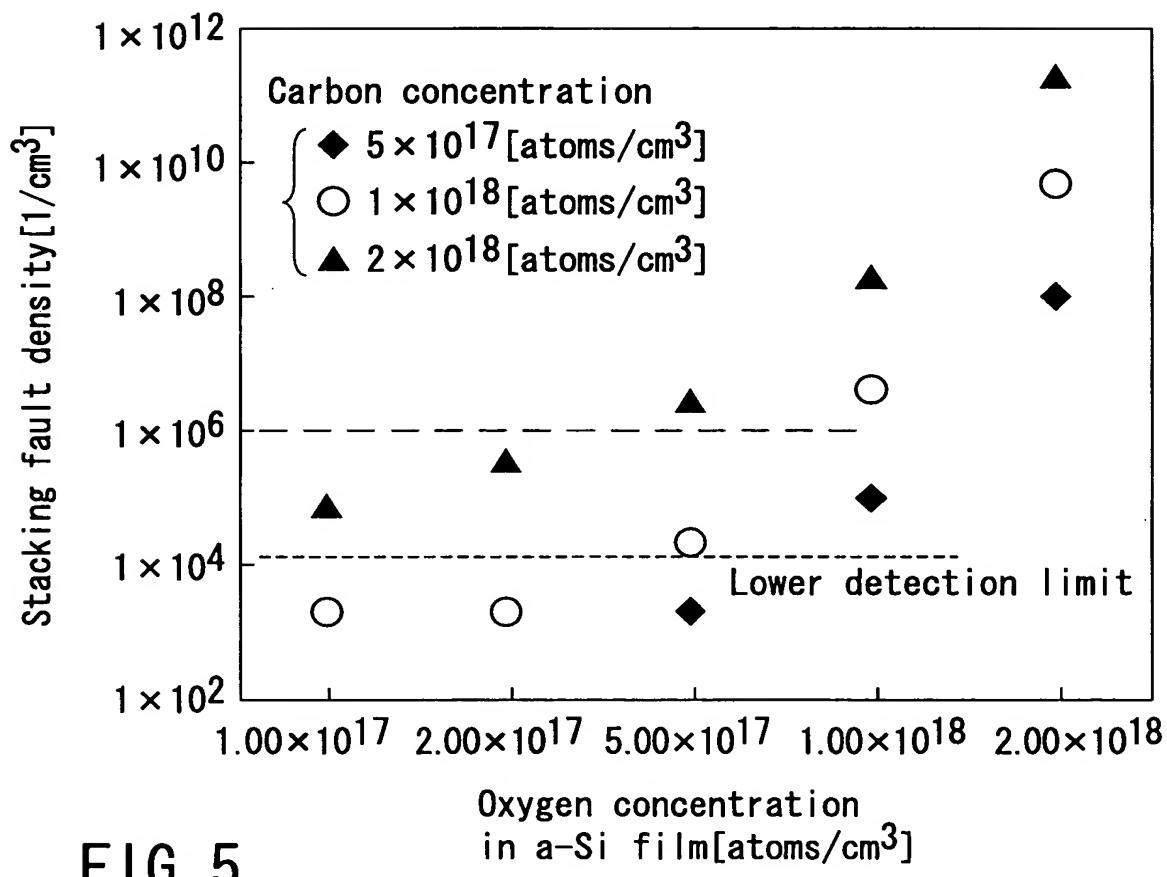


FIG. 5

Dopant	Carbon	Oxygen	Nickel
Acceleration energy	100 KeV	130 KeV	100 KeV
Sample number	Dose (atoms/cm ²)	Dose (atoms/cm ²)	Dose (atoms/cm ²)
001	1.5×10^{13}	1.5×10^{13}	7×10^{11}
002	1.5×10^{13}	1.5×10^{13}	1.5×10^{12}
003	1.5×10^{13}	1.5×10^{13}	3×10^{12}
006	3×10^{13}	3×10^{13}	7×10^{11}
007	3×10^{13}	3×10^{13}	1.5×10^{12}
008	3×10^{13}	3×10^{13}	3×10^{12}
011	6×10^{13}	6×10^{13}	7×10^{11}
012	6×10^{13}	6×10^{13}	1.5×10^{12}
013	6×10^{13}	6×10^{13}	3×10^{12}

FIG. 6

Nickel	
Dose (atoms/cm ²)	Concentration (atoms/cm ²)
7×10^{11}	5×10^{16}
1.5×10^{12}	1×10^{17}
3×10^{12}	2×10^{17}

FIG. 7

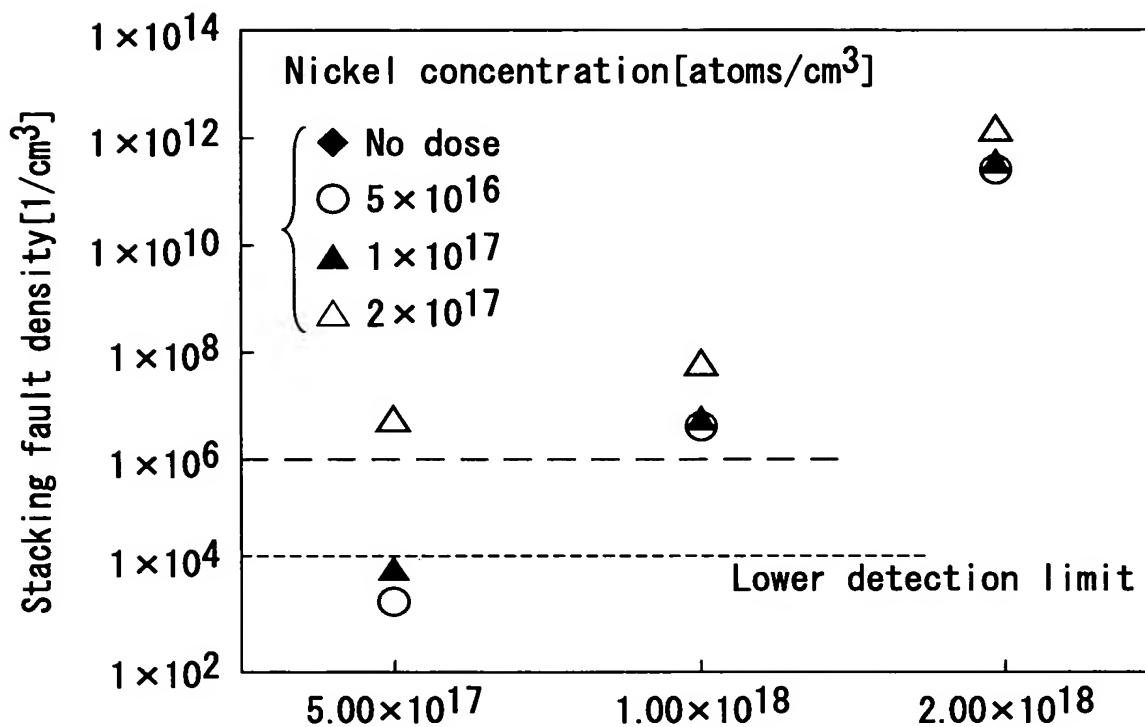


FIG. 8 Oxygen and carbon concentration
 in a-Si film [atoms/cm³]

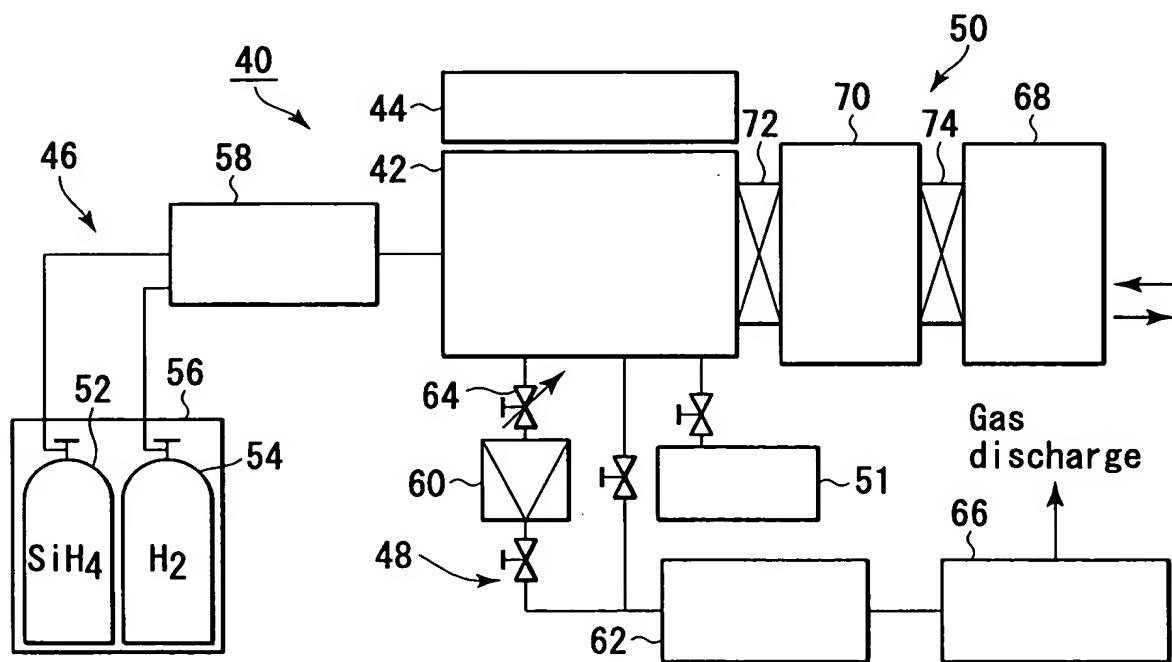


FIG. 9

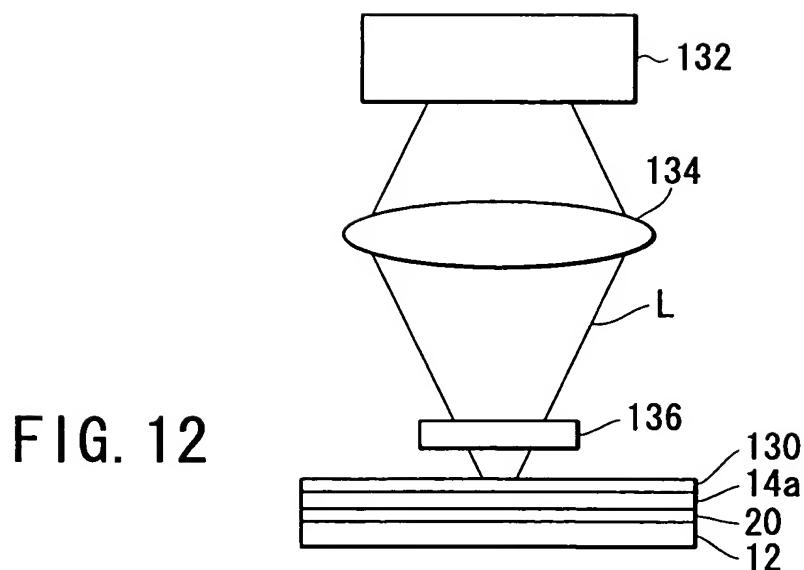
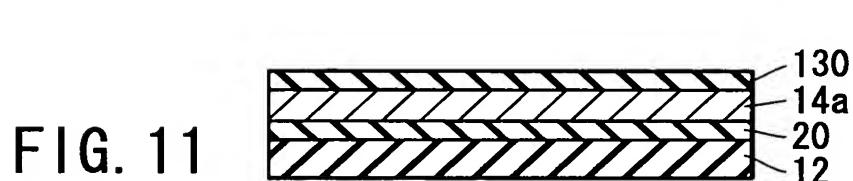
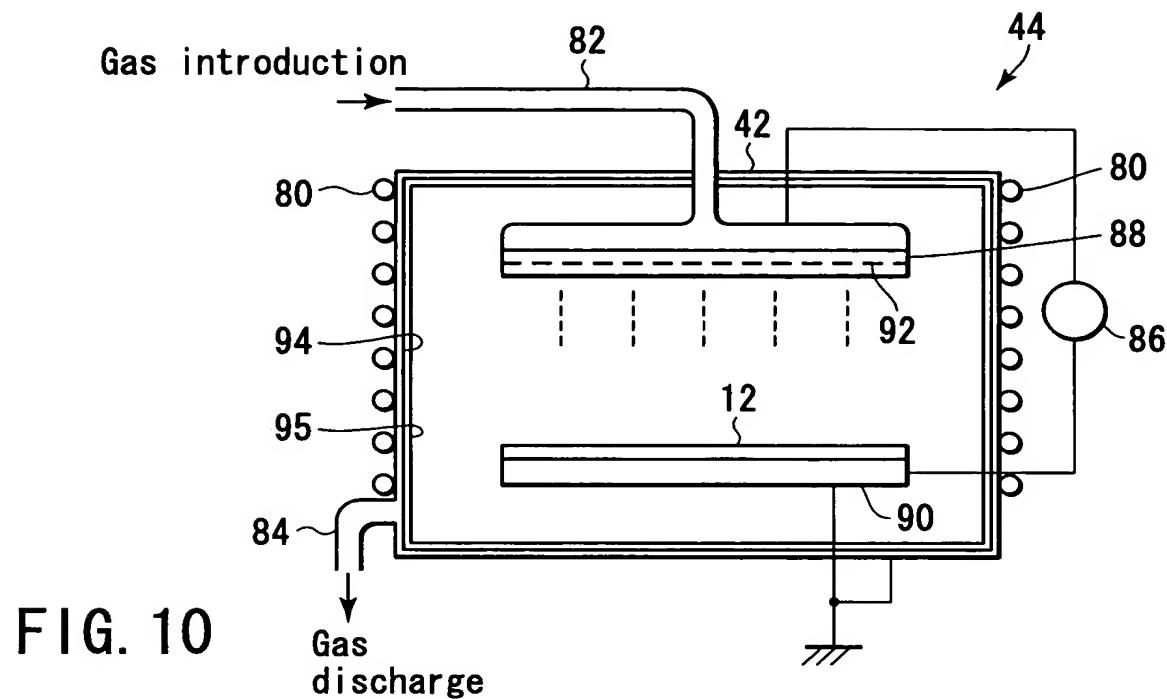


FIG. 13

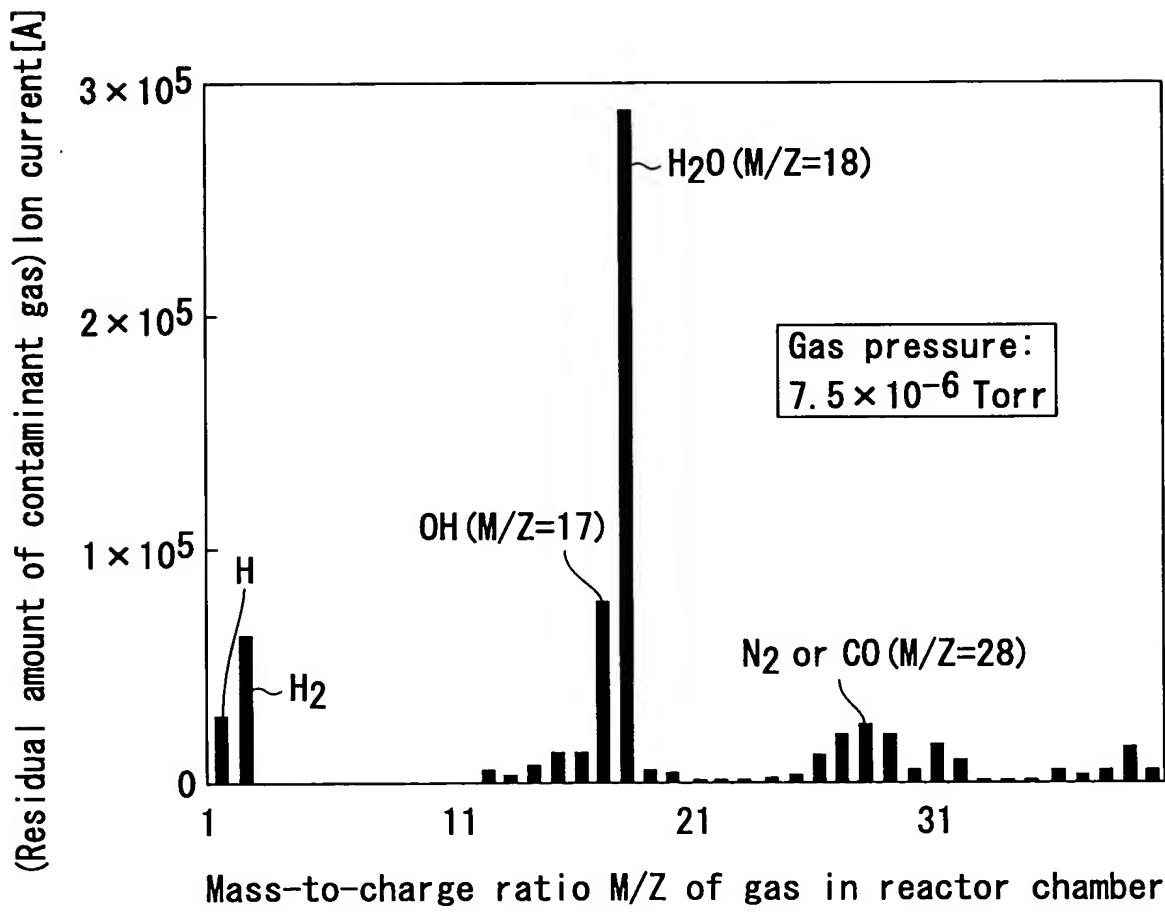
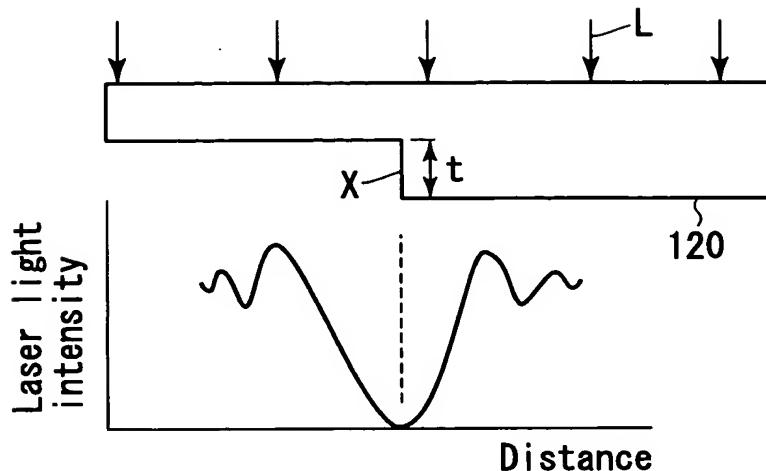


FIG. 15

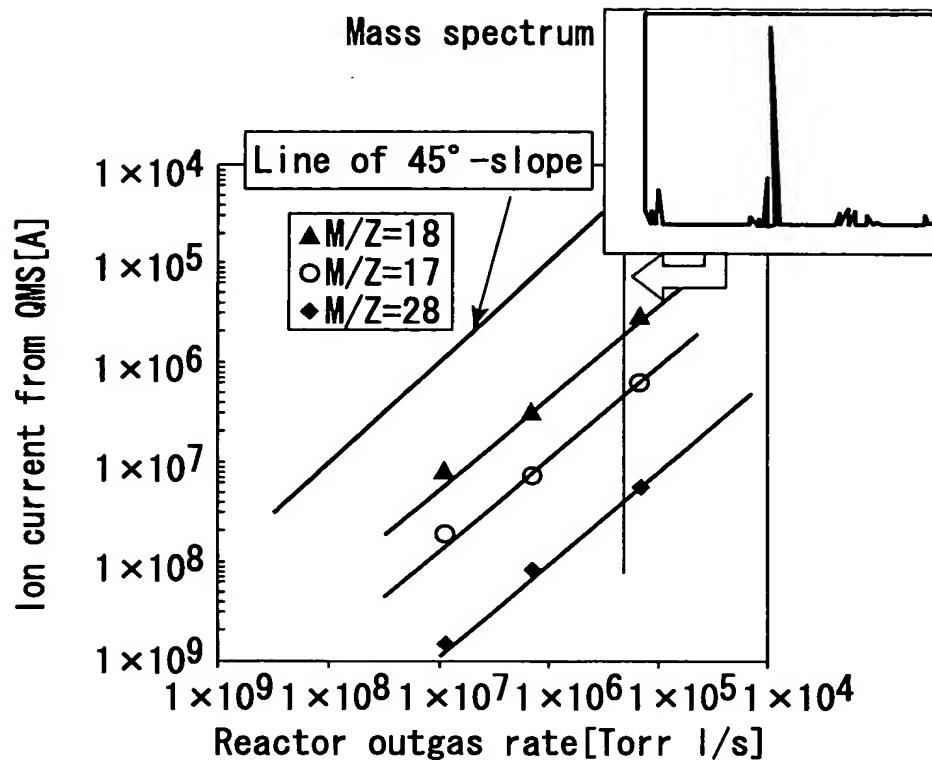
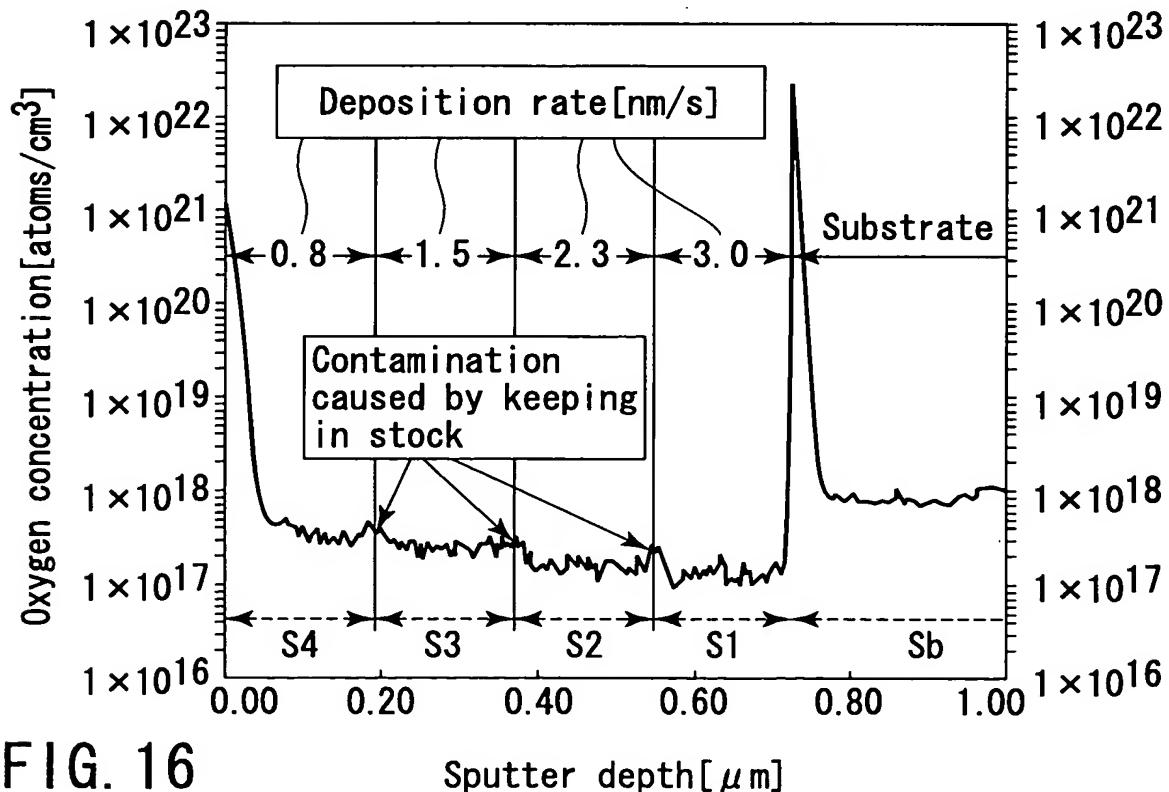


FIG. 16



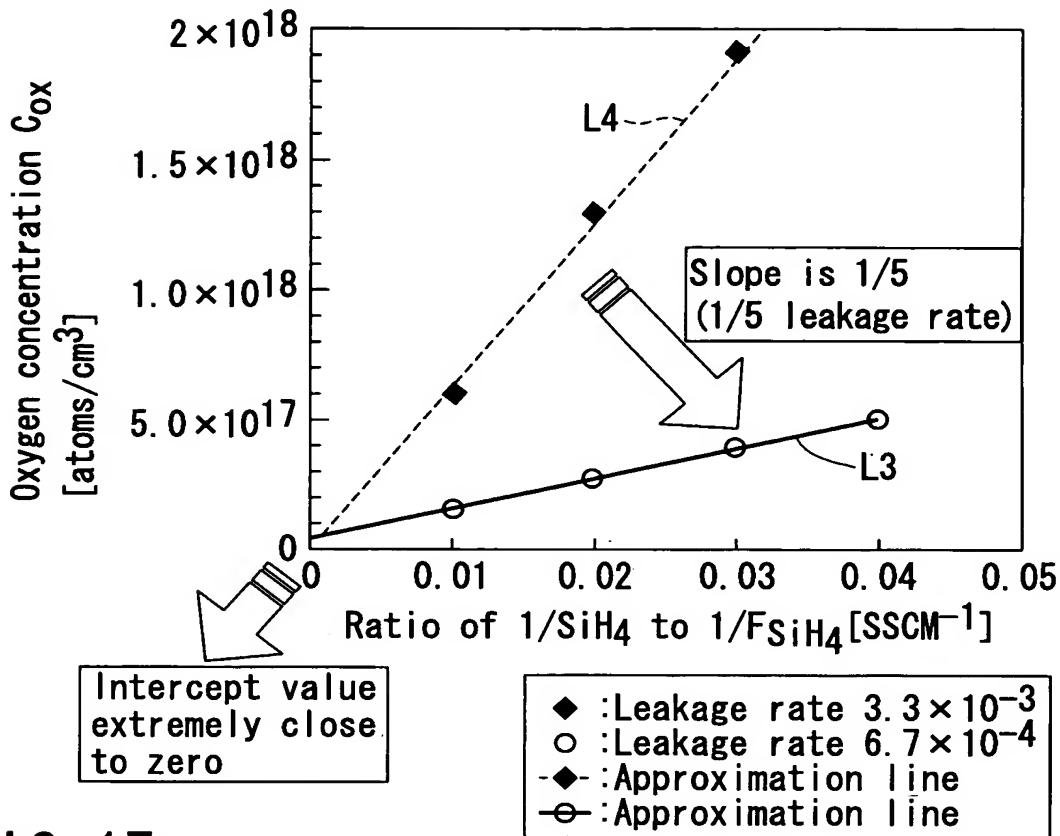


FIG. 17

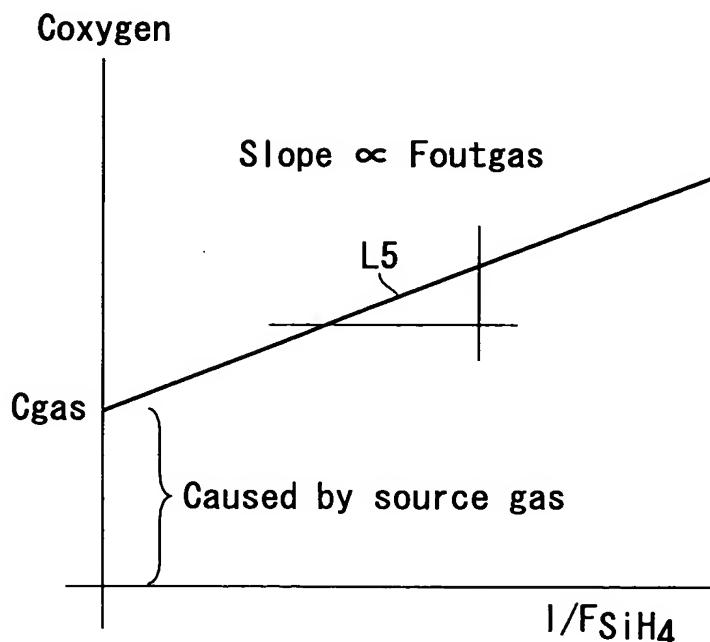


FIG. 18

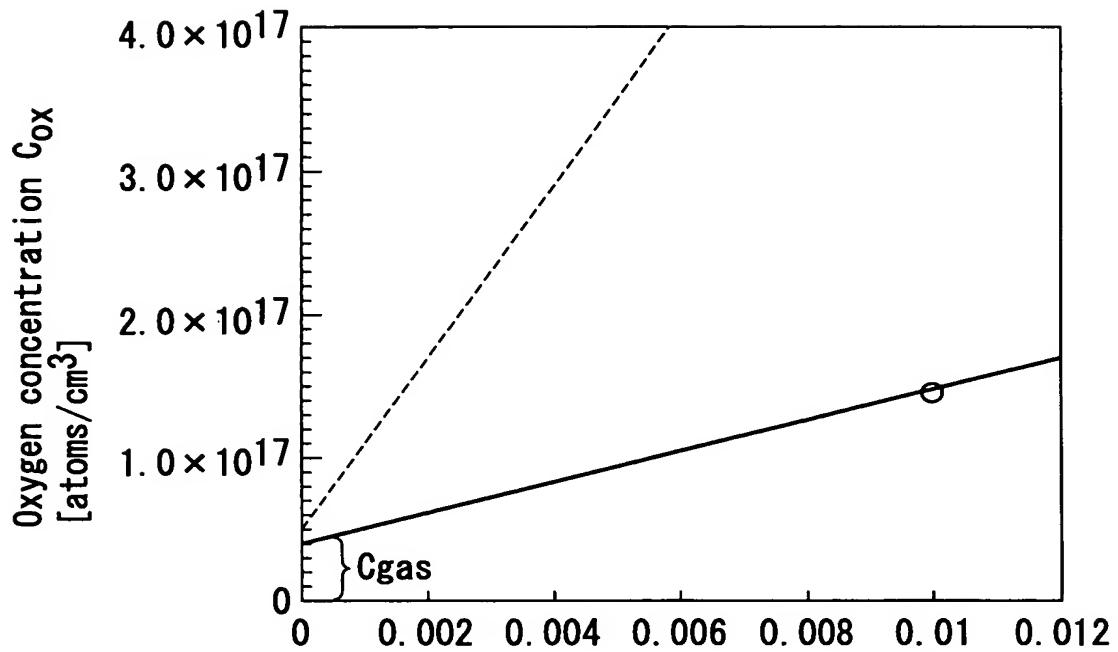


FIG. 19 Ratio of $1/SiH_4$ to $1/FSiH_4$ [SSCM⁻¹]

FIG. 20

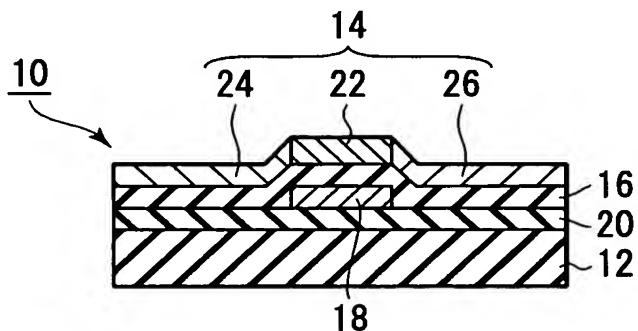


FIG. 21

